UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION DIVISION (7505P)

September 01, 2020

MEMORANDUM:

Subject: Acute Toxicity Review for EPA Reg. No / File Symbol: 94442-R

Applicant:	Kenso Corporation (M) Sdn Bhd
Product Name:	Fiestar 280 SL
DP Barcode:	D456754
Decision No.:	559150
Action Code:	R310
PC Code(s):	128850 (Glufosinate; 24.476%)

From: Bonaventure A. Akinlosotu, PhD [***Signed – B.A. Akinlosotu***]
Chemistry, Inerts and Toxicology Assessment Branch (CITAB)/Toxicology Team

To: Francisco Llarena-Arias/Erik Kraft, RM Team 24
FHB
Registration Division (7505P)

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
Glufosinate-ammonium	24.476
Other Ingredients:	75.524
Total:	100.000

BACKGROUND:

The registrant (Kenso Corporation (M) Sdn Bhd) applied to register the subject proposed product, a non-selective herbicide containing the active ingredient Glufosinate.

The Agency reviewed the data submitted for the six studies (MRID Nos 50975904 thru 50975909), to assess the acute toxicity, irritation, and sensitization potential of the proposed product (see Toxicity Profile – below under Findings). It was determined that these data are acceptable to support the registration of the proposed product.

The Product Chemistry data (including the basic and any alternate formulations/CSFs) must be reviewed and found acceptable by the Agency. The proposed label was screened as it pertains to the acute toxicity requirements. The final review of the labeling (uses, use directions, storage/disposal, etc.) is the purview of the RM team.

GLP: All studies were conducted in accordance with GLP.

Deficiencies: None

Findings (Comments and Recommendations):

All six studies are classified as acceptable and satisfy the acute toxicity data requirements for the registration of the proposed product (EPA File Symbol 94442-R). The following constitutes the toxicology profile:

acute oral toxicity	III	acceptable	MRID 50975904
acute dermal toxicity	III	acceptable	MRID 50975905
acute inhalation toxicity	IV	acceptable	MRID 50975906
primary eye irritation	III	acceptable	MRID 50975907
primary dermal irritation	IV	acceptable	MRID 50975908
dermal sensitization	-ve	acceptable	MRID 50975909

Precautionary Labeling*:

Product Reg. No.: 094442-00001

Product Name: Fiestar 280 SL

PRECAUTIONARY STATEMENTS

KEEP OUT OF THE REACH OF CHILDREN

SIGNAL WORD: CAUTION

Hazards to Humans and Domestic Animals:

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear long-sleeved shirt and long pants, shoes plus socks and chemical-resistant gloves. ***Wear protective eyewear (may be specified).***

First Aid

If swallowed:
- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

If on skin or clothing:
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

If in eyes:
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

User Safety Recommendations:

Applicators and other handlers should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change clothing.

Note to PM/RM Reviewer:

The precautionary labeling must be revised to include "……. Wear protective eyewear (may be specified)". Subsequently, you may accept/approve the rest of the precautionary labeling on the proposed label submitted by the applicant.

DATA EVALUATION RECORD

Reviewer: Bonaventure Akinlosotu, PhD **Date:** August 31, 2020
Susan S. Little, PhD (Summitec Corp.)
Product File Symbol: 94442-R

1. DP BARCODE: 456754
2. PC CODE(S): 128850
3. CURRENT DATE: August 31, 2020
4. TEST MATERIAL:
Glufosinate Ammonium 280 g/L Herbicide; Lot #190630-15-1; 279.3 g/L Glufosinate Ammonium (ammonium(2RS)-2-amino-4-(methylphosphinato)butyric acid); CAS # 77182-82-2; clear red liquid; pH 7.52; density 1.142 g/mL; expiration date: June 29, 2021; stored at room temperature.

Study/Species/Lab Study #/Date	MRID	Results	Tox Cat	Core Grade*
Acute oral toxicity/ Wistar rat (UDP) Jai Research Foundation (Gujarat, India) Study No.: 401-1-01-23658 December 17, 2019 OCSPP 870.1100; OECD 425	50975904	**LD_{50} = 1750 mg/kg bw (using AOT 425 StatPgm) in female rats with an approximate 95% CI of 1236 mg/kg bw (lower) to 4450 mg/kg bw (upper).** Nine fasted female rats were given the test substance as received. The animals were sequentially administered 550, 1750, or 5000 mg/kg bw test substance. Both rats administered 550 mg/kg bw and 3/4 rats administered 1750 mg/kg bw survived to study termination (Day 14, except one rat administered 1750 mg/kg bw was observed for 21 days), gained body weight, and appeared normal for the duration of the study. One rat administered 1750 mg/kg bw and all three rats administered 5000 mg/kg bw died by Day 2 after exhibiting lethargy. Discoloration of lungs or liver, reddish foci in lungs, whitish froth in trachea, and/or reddish fluid in the thoracic cavity were observed in the decedents at necropsy. No gross abnormalities were observed in animals that survived to study termination.	**III**	**A**
Acute dermal toxicity/ Wistar rat (Fixed Dose Procedure) Jai Research Foundation (Gujarat, India) Study No.: 403-1-01-23659 October 12, 2019 OCSPP 870.1200; OECD 402	50975905	**LD_{50} > 2000 mg/kg bw (both sexes)** Ten rats (5/sex) were dermally exposed to 2000 mg/kg bw test substance as received as a limit test. Three male and four female rats survived exposure to 2000 mg/kg bw, but exhibited lethargy with recovery by Day 10, then appeared normal for the remainder of the	**III**	**A**

		study. Two males and one female died by Day 4 after exhibiting lethargy. All male rats that survived to study termination gained body weight; surviving females lost body weight by Day 7, then gained weight, although two rats failed to regain initial body weight. Gross examination of the decedents revealed white patches on the skin. No gross abnormalities were observed in animals that survived to study termination.		
Acute inhalation toxicity/ Wistar rat (4-hour, Nose-only) Jai Research Foundation (Gujarat, India) Study No.: 405-1-01-23660 October 11, 2019 OCSPP 870.1300; OECD 403	50975906	**LC_{50} > 5.265 mg/L (both sexes)** 10 rats (5/sex) were exposed to test substance aerosolized as received. Mean gravimetric chamber conc.: 5.265 mg/L; Average MMAD: 3.73 µm; Average GSD: 1.58; Nominal conc.: 21.88 mg/L. All animals survived exposure and gained body weight (following transient body weight loss) during the study. No observable clinical signs of toxicity or gross abnormalities at necropsy.	**IV**	**A**
Primary eye irritation/ New Zealand White rabbit Jai Research Foundation (Gujarat, India) Study No.: 407-1-01-23662 October 10, 2019 OCSPP 870.2400; OECD 405	50975907	**Mildly Irritating** **MMTS = 8.0 at 1 and 24 hours** The undiluted test substance (0.1 mL) was instilled into the right eye of 3 male young adult rabbits. Each eye was anesthetized, and systemic analgesia was provided. At 1 hr post-dose, 3/3 treated eyes exhibited "positive" conjunctival redness (grade = 2) and chemosis (grade = 2). At 24 hrs, corneal epithelium damage was observed in all treated eyes and resolved by 48 hrs. All "positive" conjunctival irritation resolved by 48 hrs; all eyes were clear of irritation by Day 7 (study termination). No corneal opacity or iritis was observed in any eye during the study. All animals appeared active and healthy and maintained or gained body weight during the study.	**III**	**A**

Primary dermal irritation/New Zealand White rabbit Jai Research Foundation (Gujarat, India) Study No.: 406-1-01-23661 October 10, 2019 OCSPP 870.2500; OECD 404	50975908	**Moderately Irritating;** **Mean irritation at 72 hrs = 2.0** **PDII = 3.0** Three female rabbits were exposed to 0.5 mL test substance as received. One hr post-dose, all dose sites exhibited well-defined erythema (score = 2) and slight edema (score = 2). Irritation decreased over time with resolution of all irritation by Day 7 (study termination). Scaling of skin at all dose sites was observed on Days 4 and 5. Other than dermal irritation, no signs of gross toxicity, adverse clinical effects or abnormal behavior were observed in any animal; all animals gained body weight during the study.	**IV**	**A**
Dermal sensitization/ CBA/J mice (LLNA) Jai Research Foundation (Gujarat, India) Study No.: 409-1-01-23663 December 17, 2019 OCSPP 870.2600; OECD 429	50975909	**Not a dermal sensitizer.** Based on the results of preliminary testing, 25 female mice (5/group) were used for the main study. A vehicle/negative control (1% Pluronic® L92 Surfactant), a positive control (25% v/v HCA [85%] in 1% L92), and 2.5%, 5%, and 10% (v/v) test substance in 1% L92 were used. No dermal irritation was observed at any test site. SIs for the 2.5%, 5%, and 10% test groups were 1.32, 1.84, and 2.75, respectively. The positive control group had a SI of 6.54 (a SI ≥ 3 is considered a positive response). Body weights of treated and positive control mice were comparable to vehicle control mice. No signs of toxicity were noted in the main study. No clinical signs were noted prior to death. No necropsy was performed on any animal.	**Negative**	**A**

***Core Grade Key: A =Acceptable; S = Supplementary; U = Unacceptable; D = Data Gap; W = Waived**